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September 27, 2012 12-NWP-157

Mr. Matthew S. McCormick
Richland Operations Office
United States Department of Energy
P.O. Box 550 MSIN: A7-50
Richland, WA 99352

Mr. John G. Lehew
CH2M HILL Plateau Remediation Company
P.O. Box 1600 MSIN: H7-30
Richland, WA 99352

Re: Dangerous Waste Compliance Inspection at United States Department of Energy Hanford Facility, Central Waste Complex (CWC) on March 7, 8, 14, 15, 2012.
RCRA Site ID: WA7890008967

Dear Mr. McCormick and Mr. Lehew:

Thank you for your time during the recent inspection to determine compliance with the Washington State Dangerous Waste Regulations (Washington Administrative Code Chapter 173-303). These regulations establish a system for safe and responsible management of dangerous waste.

Several areas did not comply with the Dangerous Waste Regulations at CWC. These areas are listed in the enclosed Compliance Report. Ecology will be in contact with you to discuss actions to correct them, and to identify specified timeframes.

You may contact me at 509-372-7921 or John.Price@ecy.wa.gov if you have questions or need further information.

Sincerely,

John B. Price
Tri-Party Agreement Section Manager
Nuclear Waste Program

dbm
Enclosure

cc w/enc: Michael Collins, USDOE
Al Farabee, USDOE
Joel Williamson, CHPRC
Administrative Record: CWC
Environmental Portal
USDOE-RL Correspondence Control

Washington Department of Ecology
Hazardous Waste & Toxics Reduction Program
Compliance Report

Site :	**Hanford CWC Facility RCRA ID#: WA 7 89000 8967**
Inspection Date:	March 7, 8, 14, 15, 2012
Site Contacts:	Mike Collins, US Department of Energy (USDOE) Stu Mortensen, CH Plateau Remediation Company (CHPRC) Joel Williams, CHPRC Paul T. Karschnia, Materials and Energy Corporation (M&EC)
Phone:	(509) 376-6536
Site Location:	P.O. Box 550 Street Address Richland, WA 99352
At This Site Since:	NAICS#:
Current Site Status:	Unverified Dangerous Waste Management Unit (DWMU)

Ecology

Lead Contact: Kerry Graber Phone: 360-407-0241 FAX: 360-407-6305

Other Representatives: Joanette Biebesheimer
Kathy Conaway
Jerry Yokel

Report Date: September 27, 2012

Report By: Kerry Graber

Kerry A. Graber (Signed) 9/26/12 (Date)

Facility Background:

The Hanford Facility boundary encompasses an area of approximately 586 square miles. The Central Waste Complex (CWC) is a treatment, storage, disposal (TSD) group consisting of many dangerous waste management units (DWMUs). CWC is an integral part of a waste management system that has developed over time to manage mixed or dangerous waste from the closure and cleanup of a number of operations at the Hanford Facility. This activity occurs under the Hanford Dangerous Waste permit and the Hanford Federal Facility Agreement and Administrative Consent Order. The latter contains a compliance schedule (Appendix D) with milestones and is also known as the Tri-Party Agreement (TPA). The TPA references the M-91 milestone series as such:

> The scope of the M-091 Milestone series is to complete removal of the retrievable stored waste (RSW) from the burial grounds and eliminate the backlog of mixed low-level waste (MLLW) and transuranic mixed (TRUM)[1] waste in storage by December 31, 2030. When these milestones are complete, United States Department of Energy (USDOE) will have successfully treated the MLLW and shipped the TRUM waste offsite for disposal.

[1] TRUM waste is a higher level of radioactivity (concentrations greater than 100 nCi/g), from elements with atomic numbers greater than that of uranium.

The CWC is one of four TSD groups referred to as the solid waste operations complex (SWOC). The other three TSD groups are referred to as Waste Receiving and Processing Facility (WRAP), T-Plant Complex, and the Low-Level Burial Grounds Trench 31 & 34 (LLBGs 31 & 34).

The CWC is usually the first TSD group of SWOC that receives containers of RSW (MLLW and TRUM). Once retrieved, the MLLW containers are stored at CWC until either sent to one of the other SWOC TSD groups or sent offsite to a permitted facility for Land Disposal Restriction (LDR) treatment. The off-site facility opens the containers, inventories the contents, verifies the waste, and repackages it for storage or disposal back at the Hanford Facility. LDR-treated containers are returned to the Hanford Facility and may be stored at CWC, or disposed of at the Environmental Restoration Disposal Facility (ERDF), a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) landfill, or at LLBGs 31 & 34. Currently LDR treated MLLW returning to the Hanford Facility is disposed at the LLBGs 31 & 34 instead of ERDF. The LLBGs 31 & 34 do not have final status permit conditions in the current Hanford dangerous waste permit (Revision 8c).

TRUM waste containers have been certified by an on-site consultant at the Hanford Facility to meet the requirements for shipment to the Waste Isolation Pilot Project (WIPP) in New Mexico. The certifying contractor is no longer at the Hanford Facility, so TRUM waste cannot be shipped to WIPP at this time unless it is shipped to the Idaho USDOE facility for certification. Some TRUM waste has been shipped to an offsite permitted facility for treatment, but then was returned to CWC for storage. Lack of adequate budget appears to be the primary factor in why TRUM waste is in long-term storage at the CWC.

The Hanford Facility currently has a final dangerous waste permit that was issued by the Department of Ecology (Ecology) August 29, 1994 and expired in 2004. A number of permit modifications have been approved since the permit was issued, and these are referred to as revisions. The current approved revision is referred to as Revision 8c. A new draft permit (Revision 9) was issued May 1, 2012 for public comment through October 22, 2012. The 1994 permit does not have the CWC DWMUs listed and there are no Part III permit requirements that establish and administer the dangerous waste acceptance and storage at the TSD group. USDOE asserts the CWC is covered under a broad Part A, that assertion is applied to all of the SWOC TSD groups, and that the SWOC TSD groups comply with requirements for an interim status facility. USDOE further claims that SWOC operates under the interim status standards of the Washington Administrative Code (WAC) 173-303-400 and select portions of the Revision 8c permit.

Note: A review of a Part A referred to in the previous paragraph, submitted by USDOE in 2008, failed to find any specific reference, photograph, or diagram of CWC expansion areas.

For the purpose of this inspection, it is Ecology's position that the CWC outdoor expansion area does not have an interim status permit, because the existence of a final status permit voids any claim to an interim status permit under chapter 70.105 RCW and chapter 173-303 WAC, specifically WAC 173-303-400(2)(a).

The Dangerous Waste Permit Revision 8c, part I.A apply to the operation of this facility. This permit condition states:

> "TSD units operating or closing under interim status will maintain interim status until that TSD unit is incorporated into Part III, V, and/or VI of this permit, or until interim status is terminated under WAC 173-303-805(8)." Permit Number WA7890008967, Revision 8C, Part I Standard Conditions, 1.A Effect of Permit.

The standards used to evaluate compliance for this investigation are the interim status facility standards in WAC 173-303-400 and the regulations incorporated into the interim status standards by reference.

Post-inspection documents provided by Mr. Collins at my request included a waste analysis plan from revision 7 of the 1994 permit, and waste acceptance procedure "0063" (Hanford Site Solid Waste Acceptance Criteria, HNF-EP-0063) to further evaluate whether current practices meet facility standards. Also provided at my request was technical procedure SW-040-043, Inspect CWC & Miscellaneous Buildings, Revision 8, change 5 dated 03/09/12 by CH2MHill for the inspection plan.

Inspection Summary:

On February 7, 2012 Ms. Kathleen Conaway received a phone call from Wayne Toebe, CHPRC, to inform Ecology that a leak was detected from a container stored at CWC expansion area, box 231-Z-DR-11.

Note: This contrasts with claims in letter # 12-EMD-0061 dated 19 April 2012 from Mr. McCormick to Mr. Kowalski that labels were present but not visible on the photos.

On February 21, 2012 Joanette Biebesheimer, Ecology Inspector, and Steve Lowe, Ecology SWOC Lead Permit Writer, visited CWC. Also present were Joel Williams, Stu Mortensen, Dave Gillis of CHPRC, Mike Collins and Tony McKarns for USDOE, and Paul T. Karschnia of M&EC.

Ecology staff were told at this meeting that the box 231-Z-DR-11 leak was discovered by radiological control technicians (RCTs) during monitoring of the box as a contamination area (CA). The CA had been identified in the November/December, 2011 timeframe. During the February 6 survey of the CA boundary the RCTs found 84,000 disintegrations per minute (dpm)/100cm^2 from direct sampling. Direct sampling at the leak from the box measured 480,000 dpm/100cm^2.

Note: It was explained later that direct sampling means holding the instrument approximately ¼ inch from a surface and taking a reading.

Mr. Lowe recorded in his notes that the box originated from the east end of trench 1 at the LLBG 218-W- 4C. According to his notes a total of 36 gallons of liquid had been collected so far in the blue bottles (carboys).

During the February 21, 2012 meeting USDOE informed Ecology that a sample of the liquid had been pulled on Friday, February 17, and was going to be analyzed at Waste Sampling and Characterization Facility (WSCF) for metals, PCB, and specific volatile organic compounds that were supposed to be in the box according to records. The full scan of organic compounds was not ordered. The delay in analysis of the samples was explained as a necessary delay because the samples were pulled on a Friday and could not go to the lab on the weekend. Samples were going to take from seven to thirty days to get results. We were provided the results on March 8, 2012. (The laboratory report gives two sample dates, with two separate samples for 2/12/12 and 2/16/12. Joel Williams clarified verbally to Ecology that the later date was a blank provided to the laboratory at their request.)

During the February 21, 2012 meeting specific questions about the care of the box were posed by Ecology to the facility staff. It was noted that while the plywood boxes have covers, the two cement boxes such as the leaking one were not covered. Mr. Collins stated that nothing gave them the indication that the concrete boxes needed tarps, they appeared to not need them. (There are two concrete boxes, the larger of the two is box 231-Z-DR-11).

When questioned about the lack of a report on the spill in the regularly submitted "occurrence reports" provided to Ecology, the response was that the spill was "not reportable" and did not meet the "criteria" for reporting.

Ms. Biebesheimer and Mr. Lowe observed the box from a distance during this site visit. Photos were taken. Drip pans with blue bottles laid on their side horizontally were noted. The box had rusted seams on one side visible through binoculars. Mr. Mortensen said that leaks are coming from the joints, and that they put wicking on the leaking areas to help direct the liquid into the bottles.

During the February 21, 2012 site visit Ms. Biebesheimer was told that fixatives had been placed on the ground and covered with yellow plastic. Fixatives are a chemical product that when applied helps "fix" radioactive contamination in place. At the debriefing before leaving the site, Ms. Biebesheimer requested the following documents:

1. The AK [acceptable knowledge] package and solid waste information tracking system (SWITs) report
2. Operating records for the box #231-Z-DR-11
3. CA identification, how long the box has been a CA, and why
4. Sampling and Analysis Plan used for sampling the collected liquids (SAP)
5. Total calculations of the amount leaked to the ground, and the amount collected in bottles.

Note: By March 7 the only information provided to Ecology from this list was the AK and SWITs report provided to Ms. Biebesheimer.

During the discussion of records, Mr. Williams indicated that Wayne Toebe called Ms. Conaway on February 6, 2012. This did not match Ecology's records. Mr. Williams insisted Ecology was notified on the day of the spill. Mr. Williams indicated that the Washington Department of Health requested logs of the day of the spill and two otber dates. Ms. Biebesheimer requested the log records since the CA had been identified in December 2011.

During a follow up conversation with Mr. Williams the afternoon of February 21, 2012 Ms. Biebesheimer requested that the laboratory analyze for all of the constituents from the waste codes identified for the box specifically the constituents found in the "F-codes", e.g., F001, 2, 3, and 5.

Ms. Biebesheimer received copies of photos from DOH of box #231-Z-DR-11 that were taken in May of 2011. These photos clearly indicate a roped-off, CA boundary around this specific box from this earlier time. Photos of the box show the absence of proper labeling in areas easily visible for inspection. (See photo log of DOH photos.)

Ecology requested access to the box to sample liquid being collected from the box via temporary drip pans and the carboys. USDOE agreed to provide Ecology access for the purpose of this sampling and it was arranged for a return to tbe CWC on March 7 and 8 for sampling.

March 7, 2012

An in-briefing meeting was held with USDOE at the federal building in Richland to introduce the focus of the inspection and discuss the approach of the investigation. During this meeting, I requested access to view the box, review documentation, and interview personnel involved in the discovery and management of the release. Attendees to this meeting are listed on a copy of the sign-in sheet placed in Ecology's file.

During the in-briefing Mike Collins of USDOE informed me that analytical results were received from the box samples they submitted to the WSCF, a laboratory located on the Hanford Facility. Preliminary results showed that the collected material was not dangerous waste. I requested a copy of the laboratory report.

We agreed to meet at the CWC, and concluded the in-brief.

Ms. Biebesheimer, Steve Lowe, and I arrived at the CWC at approximately 11:45 a.m. We were shown to a large conference room wbere we were introduced to Dave Gillis, operations manager for CWC, and Stu Mortensen. Mr. Mortensen is the facility manager for the CWC, WRAP, and LLBGs 31 & 34 TSD groups, and Mr. Gillis' supervisor. Both are employees of CHPRC. Also present for CHPRC were Brian Oldfield, manager for the radiation monitoring program. Paul "Tad" Karschnia was present as an environmental manager for M&EC. Mike Collins was present for USDOE. Additional personnel that participated in the discussion are provided on the attached sign-in sheet copy we collected for this meeting.

I briefly discussed the purpose of the inspection, and I explained that we were investigating what we understood to be a release to the environment of mixed or dangerous waste from container 231-Z-DR-

11. Mike Collins asserted that there has not been a release of dangerous or mixed waste to the environment. We discussed the verbal results of the USDOE analytical data from their samples again. Mr. Collins asserted there were no dangerous waste constituents above TCLP thresholds, and no reportable quantity. I explained that under WAC 173-303-145 the requirement was to report and mitigate a release of a hazardous substance. Detection of a hazardous substance would be evidence of a release, so it is important to look for laboratory detections, rather than only dangerous waste designation levels.

We went over the events and the timeline of the circumstances around the release. Joanette and I were provided a small office to review documents and conduct interviews. Joel Williams of CHPRC took down the records requests (a document request form was provided, see attached). The following records were provided for review on-site:

- Operating log book kept by the daily dispatcher for the SWOC facilities. (Provided as part of the operating record.)
- SWITS data sheet for the box.

We met Dean Nester of CHPRC and discussed the sampling event and our quality assurance project plan (QAPP). I repeated Ms. Biebesheimer's request from February 21, 2012 for a copy of the sampling plan used by CHPRC personnel to collect their samples submitted to WSCF on that date.

Once it was clear what I was asking, Mr. Nester explained to me that there was a work order with a sampling task, coupled with a "technical procedure" and that was their direction for sampling the liquid previously collected from the box. There was no sampling and analysis plan used for their sample collection. I requested a copy of both the work order and technical procedure, and received these copies. The technical procedure was authored by CH2MHill, the contractor, and titled *Technical Procedure, GRP-FS-04-G-023, Container Sampling, Revision 1, Change 6,* published and effective 12/15/11.

Note: I concluded that the first sample collection did not conform to the established technical procedure. The sample volume was collected in Nalgene bottles that are not appropriate for collecting and transporting samples for volatile organic compounds. Samples were collected by operational staff and not one of the dedicated site-wide sampling teams normally called in for a sampling event.

We returned to the CWC small office and spent additional time interviewing specific individuals for more information on the liquid release. The individuals we spoke to were:

Paul T. Karschnia, M&EC
Dean Nester, CHPRC
Brian Oldfield, CHPRC

We questioned Mr. Karschnia about the operating log book entries kept by the dispatchers. Entries are made by the "on-duty dispatch." The Nuclear Chemical Operator (NCO) makes daily log entries. When

an incident happens and a problem is noted by a worker at one of the facilities, a call is made to the on-duty dispatcher who notifies the chain of command.

As supervisor of the RCTs and responsible for the radiological survey program, Brian Oldfield was interviewed about his knowledge of how the leak from the box was discovered. He explained that radiation surveys (rad surveys) are performed on retrieved boxes at the retrieval site and when they are moved to CWC storage. Containers must be surveyed when they first arrive before being placed into a storage unit. The 231-Z-DR-11 box arrived at CWC on February 26, 2009. Shawna Terry, CWC NCO, would be able to get the results of this initial radiation survey for us, so we requested a copy. (This was the first request for the baseline rad survey on the box.) The implication was that the leak was discovered by RCTs conducting surveys, but Mr. Oldfield did not respond directly to my original question.

Note: Follow-up interviews on March 14 and 15, 2012 clarified that RCTs were the first to report the release.

This 231-ZR-DR-11 box is in zone 14, and we were told this zone measures approximately 150' x 150'. Zones are areas defined by CHPRC and USDOE as allowed to have a certain range of rad waste, so that containers are segregated by their radioactivity. The original location of the box was the 218-W-4C burial ground. The box itself was an unused container repurposed from Purex and therefore still contained a label. The box was likely dragged off the bed of a railcar with a chain and back hoe into the trench where it was buried until retrieved.

The SWITs sheet indicates it was labeled "2312" from the PFP plant, containing distillates with plutonium out of uranium rods. The residual liquids were separated into drums and as liquids went to tanks, located at the Hanford tank farm. The SWITS specific tracking number, 218-W-4C was for the burial ground trench designation.

Dave Gillis told us he ordered twice daily dangerous waste inspections when the drip pans were placed under the box, (February 9 according to Mr. Mortensen). Before the release was noted, Mr. Oldfield said CHPRC conducted monthly radiation (rad) inspections of randomly selected boxes. Mr. Gillis added that dangerous waste inspections are weekly.

At this point Dean Nester came in the room to get clarification about the Ecology sampling planned for March 8th. Joanette and I spoke with Jerry Yokel, Ecology lead chemist, by phone, allowing Mr. Nester to join in the call. After discussing our ideas for sampling based on what we heard earlier on how the carboys of collected liquid were being managed, we were told by Mr. Nester that our collected samples would have to undergo rad screening and could not exceed a cumulative 10 nanocuries/gram as a worst case. This is because of a limit imposed on transporting and/or receiving mixed waste samples at the destination laboratory Ecology uses, Paragon.

During this discussion Mr. Nester clarified that the first set of CHPRC sample bottles were collected from liquid dripping off the box. There was still one of the two 1-liter Nalgene bottles kept from this

first sample collection, now stored in the "first" 55-gallon drum container staged near tbe 231-Z-DR-11 box. The first Nalgene bottle was already sent to WSCF wbere it was processed and analyzed. (The results from this sampling are found in the WSCF laboratory data package, and furtber evaluated in the attached memo from Jerry Yokel to Kerry Graber dated June 25, 2012.)

In the CWC expansion area, Joanette and I were escorted to Zone 14 to look at container box 231-Z-DR-11. We observed the box from outside a roped area, behind a cbain-link fence approximately twenty feet away. Joanette took photos of the box from the east, looking at the west side of the box. A man-lift was deployed and facility personnel were able to take a pboto of the top of the box for Joanette. Directly behind box 231-Z-DR-11 is a second, smaller concrete box that appears to have good integrity, and is not leaking at this time. This smaller box was retrieved at the same time and from the same general trench location.

Stu Mortensen explained that tbe concrete lid is about six inches thick and sits on a rubber gasket. He described a portion of the metal fittings on the box being in a "c" channel (like tbe shape of a "c" on its side => ⊔) where the wall of the container sits in tbe middle of the "c." This was difficult to observe objectively from the twenty foot setback required for the radiation CA boundary. It appeared that the wicking pads (that CHPRC positioned in the joints of tbe box) deployed to collect liquid sat at the lip of this "c" metal fitting. I was told the walls of the box are 4 to 6 incbes thick concrete. I was also told that design drawings are available for the box, and I requested a copy of these. (These drawings were received Marcb 7, 2012 at 6 p.m.)

From our view looking west at the box, I was told the ground is sloped to the south, toward tbe side where the drip pans were deployed. Stu explained that the drip pans were set under the box on February 10, which was as fast as he could get them constructed. According to Stu drip pans needed to be fabricated, because tbey were not kept in stock at the CWC. The delay represented about five working shifts and 3 calendar days before the drip pans could be available for use.

We looked at the newly constructed cover engineered for the 231-Z-DR 11 box. It was a cover made of plastic tarp material on a sturdy metal frame like a carport structure, weighted down by "ecology" blocks. This structure will provide cover only for the top of the box. The plans were in place to have the cover lifted into place overnight. Tbere was a possibility if this work was not completed by tbe morning it could interfere with our plans to sample the following day. We were tentatively planning to start the next day back at CWC at 7:30 a.m.

Back in the CWC small office, we went over the request for documents and interviews. I asked Mr. Williams for the CA monitoring and inspection records. Mr. Williams said that he did not have permission from USDOE to provide it. Mr. Williams was asked who was denying permission, and he declined to say.

Mr. Williams left the room at this point, so the discussion turned to Mr. Karschnia. We asked him who made the decision to construct a cover over the box. He thought it was a decision made as part of the CA response required for a radiological release.

We discussed preliminary plans for a path forward for the box with Mike Collins. The plan is eventually to move the box, keep it covered, and cleanup the impacted soil.

Mr. Collins laid out the following options:

Plan Option 1, the preferred option, would be to transport the box to a nearby off-site treatment facility, Permafix. Mr. Collins indicated that the CWC project is just funded for on-going care and maintenance, and there are no funds currently for sending the box off-site.

Plan Option 2 would be to move the two concrete boxes to a storage building (box 231-Z-DR-11 and the smaller, intact concrete box stored next to it).

I restated my understanding of the mitigation plan for 231-Z-DR-11 box by listing the following tasks:

- Contain the leak
- Cover the box
- Evaluate the integrity of the box
- Move the box
- Clean up the impacted soils

I confirmed with Mr. Collins that this was the USDOE plan so far, and he nodded yes. Mr. Collins said he was advised not to provide us the rad documents. This was the first denial of access to a portion of the operating record during the inspection.

We left the CWC at approximately 4:20 p.m.

March 8, 2012

We provided the following list of additional documents to Joel Williams based on the previous day's inspection:

- Field log book entries for 2/12/12 and 2/16/12.
- Guideline/requirement for responding to a radiation threat (the 30 day limit)
- CA monitoring/inspection records (This was the third request for this record.)
- Fixative MSDS's
    - Soil Cement - Hanford MSDS #035321 [Acrylic and polyvinyl Acetate Polymer]
    - Invisible Blue – Hanford MSDS #057802A [1,2,3-Propanetriol, UV Blue and Deionized water]
- Chromatographs/raw data package on USDOE's sample
- Detailed records on twice daily inspections
- Operating log for 2/6/12
- RCRA Inspection logs – notes and footnotes

We arrived for the Ecology sampling event at approximately 7:55 a.m. at CWC Building M0-720 and was provided a safety briefing for the field sampling period .

The room was full of people, and we circulated our own sign-in sheet to help us track the attendees. Jim Hogan, CHPRC, was present as the facility sampling team supervisor. The task document, 2x-12-01430/4 WCN #3 was reviewed by the safety supervisor. The safety briefing lasted until 10:10 a.m. with one short break in the middle.

During the safety briefing, the material covered was primarily for the sample crew and radiological technicians assigned to conduct the sampling activity. In the first hour of the briefing, we spent about twenty minutes revising our sampling plan based on additional information about the collected, containerized liquid from the 231-Z-DR-11 box.

There were four 55-gallon drums that held carboys of the collected liquid inside and the drums were located near the box. The first drum (referred to as Drum #1), held the 1-liter Nalgene bottle from the first collection of liquid as well as additional carboys containing liquids collected once the wicking was applied to the box. Drum #4 held the most recently collected material. The source of the liquid in the carboys was both from the wicks directing it into them, and water in the drip pans that collected from precipitation because workers were told to just dump the pans into the carboys when the carboys are changed.

The following sampling plan was agreed to:

- Drum #4: 2 VOA vials
- 1 500 ml semi-VOA

1 metals sample only if sufficient volume is present to split the sample

Drum#1:
Take entire 1 liter Nalgene bottle, and use one semi-VOA bottle

Drums #1 and 3:

- Composite samples from all carboys into split metals sample

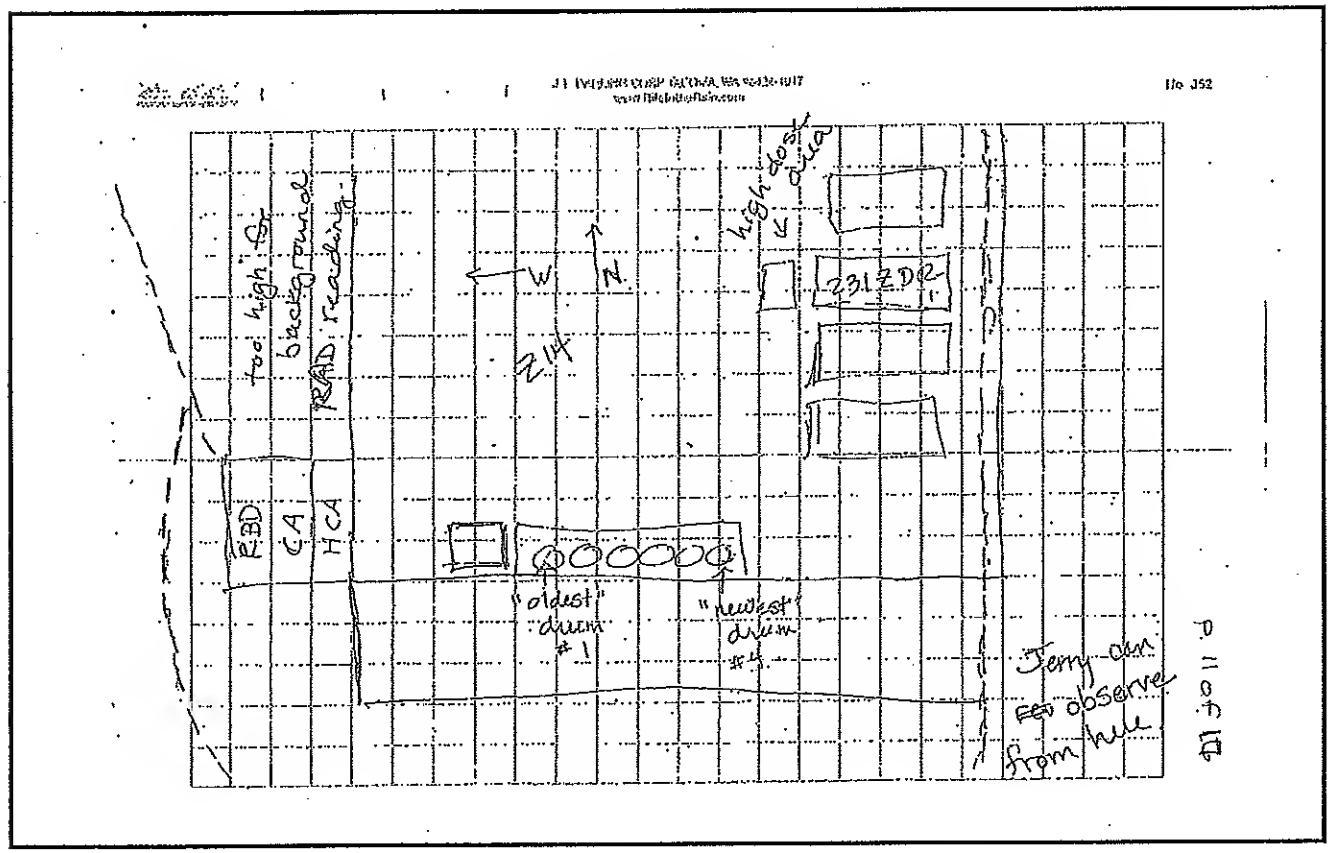
The drawing below is from my field notebook for March 8, 2012. The drawing was copied from a whiteboard hand sketch by Mr. Nester and depicts Zone 14, the box, and the drums to be sampled.

We requested photos of the drums showing any labeling on them. It was explained that each drum has a "pin" number for tracking, usually with a bar code identifier. Field sample ID numbers will indicate the drum it came from according to our numbering convention, drum #1 through #4, with #1 being the "oldest" drum, and #4 the most "recent." Drums are labeled as waste pending analysis with dates.

The sample method is to "punch" the carboy plugs into the container, insert plastic tubing in to the punched area of the carboy, and use a peristaltic pump to fill the sample bottles.

Once the safety briefing was complete Mr. Hogan expressed concerns about being able to meet the field sample schedule and get the samples shipped out the same day.

The briefing adjourned at 10:10, and Joanette and I continued our paperwork review and interviews in the CWC office. Jerry Yokel brought our own sample bottles, and accompanied the sample crew out to the box to observe the sampling. (The sample crew used their sample collection containers that contained a preservative, whereas the unused Ecology containers for "metals" samples did not.)



In the office Ms. Biebesheimer and I took a closer look at the CWC operating log book numbered "HNF-N-450 109." This book contains entries organized by date. Entries are entered by the dispatch on duty, and are noted by time of entry by the named person.

We spoke furtber witb Brian Oldfield, and Joel Williams to get a better understanding around the events of December 20, 2011 when rad surveys first reported an elevation in radiation. We asked them to identify and make available the HPT (RCT) tbat conducted the survey on that date. Shawna Terry and Rob Taylor were identified as the RCTs that conducted some of the radiological survey work. We were told that one of the RCTs was a union employee and entitled to have a union representative present. We were told that the front line supervisor also has to be present. The implication of this was that we would not be able to speak to anyone without prior arrangement, and it will take time.

I renewed my request for tbe information on the CA survey, and Mr. Williams said we need to email Cliff Clarke a request for records with tbe cited authorities for requesting them. I was told by Richland Ecology staff that this requirement to provide a written request was something new, a step that has not been required before. (This was the second time requesting this portion of tbe operating record during the inspection.)

We determined the names of people to request to be interviewed about the discovery of the leak from the box, and the decision to build a cover over the box. Mr. Oldfield identified that Mark Higby, Frank Hamata, and Stu Mortensen were the individuals to talk to about the decision to build a cover. Mr. Karschnia told us that USDOE has directed that Ecology must provide a list of people to interview, and that USDOE will review the list and arrange for us to talk to them at a later date.

We requested to speak with people in engineering operations, specifically Mike Jennings, Jay Botenus, and Frank Hamata. We also requested to speak with Stu Mortensen or his staff and Mark Higby from radiological control. We did not provide a written list at this time due to my concerns that this was a new demand on Ecology compliance staff.

Note: Both the denial of access to CA records as part of the operating record (the RCT technicians were the first to notice a stain from the box) and the limiting of access to key individuals to be interviewed obstructed our ability to gain a complete understanding of tbe nature of the release and the problems with the box 231-Z-DR 11 on this date, March 8 2012. The consequence was that Ecology was delayed in our investigation necessitating a return visit.

This denial of records appears to be coming from a difference of position between (1) USDOE wbo maintains that Ecology does not have authority to regulate rad materials, and (2) Ecology's position that we have jurisdiction over mixed waste.

We asked to see the work package for the construction of the box cover, and to discuss the protocols around "flagging" a box for the abnormal container management program (ACMP). When asked, Mr. Karschnia explained that the motivation for getting a cover built is that it is a requirement under the ACMP. He clarified that it is also possible the box is being placed into the ACMP because they are placing a cover over it. It could be either. (This kind of equivocation made it very difficult to discern how decisions were being made about proper management of the 231-Z-DR 11 box.)

We left Mr. Karschnia with a copy of tbe document request list for March 8, 2012 because Mr. Williams had left the room. We were unable to interview any more of the requested individuals because they were not made available to us.

We were off-site at 12:43 p.m. and returned to the NWP office to prepare for a short out-briefing with USDOE managers, CHPRC managers, and attorneys for both parties.

Outbriefing

John Price of Ecology's Nuclear and Mixed Waste Program did the introductions. I thanked everyone for their professional conduct. I explained that Ecology's position is that there was a release from the box. I expressed two major concems, primarily over the lack of a timely response once the release was discovered. I also explained that Ecology was hampered in our investigation because of the denial of access to the documentation.

Mr. Cliff Clarke asserted that Ecology was not entitled to the documentation we requested. He wanted to know under what legal authority we were requesting the information. I explained tbat the monitoring and survey information, specifically since the spill was discovered by radiation control technicians, was part of the operating record. As an operating TSD, the operating record must be made available to Ecology upon request.

I said that the radiation monitoring information, or CA surveys, was an indicator tbere was a release to the environment. As a container with mixed waste, the radiation component is an integral part of the waste. The surveys are a part of the operating record. As Mr. Clarke already knew, Ecology has authority to regulate the management of mixed waste.

Mr. Clarke responded that Ecology was trying to regulate radio-nuclides, and referenced a past lawsuit that clarified that Ecology did not have authority over radio-nuclides.

I countered that I was clear, there has been a release of mixed waste to the environment from a mixed waste container. The USDOE is operating a TSD at the CWC, and the requirements placed on that facility by the dangerous waste regulations are clear. Not providing operating records upon request is a regulatory violation. I added that we were not provided access to the people involved in discovering the releases so that we could interview them, either. I shared my frustration that Ecology was being obstructed in our attempts to investigate the incident, and that this was puzzling to me because USDOE and CHPRC called <u>us</u> to report a release, and now we were being challenged on the assumption there was a release.

Mr. Collins said that he made the decision to deny interviews because he was not on-site at the time and he didn't want people called in who didn't know the issue at hand.

I explained further that Ecology needs to understand USDOE's and CHPRC's criteria for making the decisions at CWC, and that the decisions made around management of the box are not being shared with us. Until March 7 we didn't know a cover was being built for the box, and we still did not have a clear explanation as to why or under what criteria a cover is being placed. The implication is that Ecology's

job as the regulator has been made more difficult in determining what appropriate steps are being taken to comply with WAC 173-303-145 when there are no adequate explanations provided for what is being done at CWC about the box, and why.

Mr. Collins admitted he didn't understand before, in his earlier statements, what a release was under WAC 173-303-145. He added that Stu Mortensen and Frank Hamata were not made available because he made the decision about access to interviews. Mr. Collins explained this was because he did not know the context of the interviews. Mr. Collins didn't want people called who didn't know or understand the issues associated with the box.

After the out-briefing, Mr. Stu Mortensen was made available to be interviewed, and a number of individuals stayed for this including Mr. Collins.

Mr. Mortensen was able to give more of a chronology of events pertaining to the 231-Z-DR-11 box, summarized as follows:

- December 20, 2011, CHPRC's rad survey staff discovered the radiation contamination while conducting random surveys of containers. A fixative was applied that day to the contaminated area on the outside of the box.

- The box was not rad surveyed again until February 6, 2012. During this rad survey, contamination of radiation was found on the ground next to the box.

- There was a meeting at CWC that took place to determine whether the box should enter the ACMP process. Rad survey technicians applied fixative to the outside of the box. Fixative was also applied around the box. There were two types of fixative used, one that was readily visible, and a second type that is not visible.

- The rad survey inspections were increased ("ramped up") by CHPRC to take place daily.

- February 6 or 7 is when the brown stain next to the box was noticed on the ground.

- On February 9 CHPRC operations started discussing structural issues like cover and containment.

Mr. Collins interjected at this point that under the ACMP they are required to take "appropriate measures." The interview digressed with a discussion about lack of funding dollars for treatment, storage, or disposal for this mixed waste, and barriers to getting covers bought and placed on all the uncovered mixed waste containers.

Mr. Mortensen clarified that starting in 2009 there was an effort to obtain resources and planning was undertaken to get covers for the boxes. Employees were recruited; materials identified, and detailed measurements taken of the boxes in order to get specially designed tarps. He explained that the challenge is the weather, and UV wears out the tarps. He said they are building a schedule to cover them all.

We briefly discussed improvements for dangerous waste inspections and an inspection checklist example that would better fit the situation at CWC. I said I would look around for a better example to send him. (Due to the complexity of the operations I am holding off on providing this at this time.)

We asked Mr. Mortensen about engineering of the box, as the structure of the concrete box with metal projections does not lend itself to the specially constructed felt-lined tarps. He stated that Frank Hamata is the engineer who as part of the ACMP procedures got involved in designing a cover. This was about February 9. The reason cited for the cover was concern about precipitation and rainfall. March 9, 2012 was the deadline for getting the cover in place for the ACMP program which has a 30- day time requirement under the program.

Ms. Biebesheimer asked if the 231-Z-DR 11 box had ever been a CA prior to December 20. Mr. Mortensen didn't know because he started his new position in October of 2011. Mr. Collins said he didn't know. Ms. Biebesheimer made a formal request for the information on whether this box was ever a CA prior to December 20, 2011.

Note: According to a review of CA surveys from December, 2011, the box 231-Z-DR-11 was posted as a CA.

This completed the interviews, and completed the first phase of the inspection.

March 14, 2012

Arrangements were made to conduct employee interviews on March 14 and 15, 2012. Kathy Conaway and I returned to the CWC at approximately 10 a.m. for this purpose.

We met with Joel Williams and Brian Oldfield of CHPRC. Also present was Ray Swenson, attorney for CHPRC, Mike Collins for USDOE, and Paul "Tad" Karschnia, from M&ME.

While we waited for the first interview, Mr. Collins described the construction of the 231-Z-DR-11box by drawing a picture on the white board in the conference room. This picture showed in profile an inner metal liner like a tray, the concrete slabs that make up the wall and floor, the u (previously called "c") shaped brace that the wall of the box sits in, and a metal plate like a sled, with one up-turned edge to make dragging the box in and out of the trench easier. All of this sits on a metal frame off the ground; what they call a lift platform.

Our first interview of the day was with Patricia Carter, CWC Nuclear Chemical Operator (NCO). She is a technician assigned duties to occasionally perform dangerous waste inspections. With her was Dave Cleavenger, who is Ms. Carter's union representative and employee of CHPRC.

Ms. Carter has ten years (off and on) in this position, with on-the-job (OJT) training, and refresher training every two years. Ms. Carter said she looks for leaks, cracks, anything that is not normal conditions. If she finds a problem, the procedure is to report it to the on-duty supervisor, and/or the on-

duty dispatch. Any necessary follow-up on problems would be included in pre- and post-job briefings. This would take place with the entire group on that shift. An open item, or unsatisfactory condition, would be put onto an open item list on their internet. Every week she would get a copy of the open item list before going out for an inspection. Examples of open items[i] would be:

- Scratches on the floor
- Jammed door
- Tumbleweeds
- Loose covers
- Ropes not attached
- Wood debris

Non-imminent items go on to the work packages and get scheduled for fixing. Ms. Carter did not recall finding anything coming out of the boxes on the particular date in question. She usually acts as dispatch, but has been doing the two-times-per-day inspection for the 231-Z-DR-11 box, in the morning and the afternoon.

Once the leak was found with this box Ms. Carter stated that the action switched to a "recovery team" to deal with the recovery of material. Members of the team were Russ Lowery, Rich Monlux, Kevin Wallis, Gene Rowlette, Dan Ridgley, and Bob Olsen.

The next interview was with Michael Kiehn, a NCO who has worked at the CWC for four years. Dave Cleavenger sat in on this interview.

Mr. Kiehn explained that in 2009 the various areas at CWC changed to zones, each zone has a different curie level limit.

Mr. Kiehn performs dangerous waste inspections of the CWC, including the outdoor areas with containers, and has been going out to the inspections with Christine Kiehn conducting OJT for her training. Someone else was the first to notice the leak. Once the release was reported and a CA established, it was not possible to get close for the required weekly DW inspection, forcing the CWC inspectors to use binoculars for seeing up close. Normally they get close enough to touch the box, although they do not as a matter of practice. They would get close enough to notice weeping, dripping, or staining and identify labels.

Mr. Kiehn talked about the inspection checklists. He told us Bob Mannis is the procedure writer and manager for Mr. Kiehn's group. Changes to the checklist itself are submitted to Mr. Mannis from the NCO's. The checklists they use are for the entire CWC, not just the outdoor expansion area where this box is stored. We learned through this discussion that the source of the checklist is from the dangerous waste site-wide permit, and it is not specific to any of the individual DWMUs at CWC where it is used.[ii] Both certified NCOs and managers conduct the training on CHPRC inspection procedures.

Note: At my request Mr. Collins provided *Technical Procedure SW-040-043, Inspect CWC & Miscellaneous Buildings,* Revision 8, Change 5, published 03/19/12, Effective 03/09/12, by CH2MHill. The procedure referenced above is the current one used for conducting dangerous waste inspections. It is not part of the current permit.

Ms. Conaway asked if this training was dangerous waste, mixed waste, or hazardous substance training. This caused some confusion, and the only answer was that it was "procedures" training.

Cindy Faith, also an NCO, was interviewed next. Ms. Conaway asked her about observations of big chunks of rust falling off the containers (this was identified in the notes section in the inspection checklists Ms. Conaway was reviewing.) Ms. Faith explained they receive training on rust – what is a problem, what is normal. They are trained to observe problems with containers formally and with OJT. The reference of rust chunks would have been about a flake or layer of rust peeling off.

Ms. Conaway asked Ms. Faith to describe how she does inspections. Ms. Faith described looking at boxes when they come in before they are covered, and noting their conditions. Once covered, the cover takes care of most of the problems. Ms. Faith said she looks for anything new on the cover, around the container, or under the box if she can see. Boxes are not automatically covered when they arrive.

Ms. Conaway asked about what she thought of the uncovered box we are concerned about. Ms. Faith said someone else would have decided not to cover this box right away. She was not involved.

Ms. Faith clarified that about three years ago she conducted inspections routinely. Some of her job duties have changed. The safety log book keeps track of container problems when they come over and when they are placed in CWC. Newly arrived boxes are expedited for action.

Ms. Faith bas had a two-year training certification, performance demonstration, a test, OJT initially, and HAZWOPER training. Either 24 or 40 hour HAZWOPER training is provided as part of a training plan.

Next we interviewed Dwayne Bierman, supervisor of the NCO's. Mr. Bierman supervises Patricia Carter, Michael Kiehn, Christine Kiehn, and Cindy Faith. Mr. Bierman was asked about the open item list. He explained it is not something readily accessible. He agreed to obtain a copy for us to look at.

Mr. Bierman explained that a work package is developed to fix an open item. He stated that he will try to fix new items the week it is discovered, but if he can't fix it, it will be noted week to week until it is fixed.

We asked Mr. Bierman about the box covers. He said they are made of heavy gauge plastic with a felt liner. Some will last for months, some only last days. The boxes are irregular, and no two are the same. He stated that he works on the campaign to move the boxes from the burial ground, and does radiological assays in order to move the boxes to the CWC facility.

He explained that you cannot place boxes or boxes with covers in the CWC buildings because they are made of material that could be considered fuel, or "combustible" in a fire. When asked about where the restriction comes from, we were told by Mr. Bierman that it is an "FHA" limit on what can be put into a building. "FHA" stands for "fire hazard assessment." There are technical safety requirements (TSRs) along with fire prevention requirements what can go into the buildings. Plywood and fiberglass (materials that some containers are constructed with) or the covers are considered combustible materials.

He stated that is why some of the containers are outside. Mr. Bierman said they are in the process of over packing boxes into metal boxes that can be moved into a building. The metal boxes can be 9' x 5' x 5', 8' x 4' x 4'. The range tends to be from 11 to 14 feet in size. Once packed into metal boxes, they can be stored in the buildings.[iii]

Mr. Bierman said the motivation for the assay campaign was to verify contents of boxes so they could be shipped off-site for treatment and disposal. PERMAFIX Northwest (Permafix) is an off-site facility that receives containers from USDOE for treatment and repackaging. Permafix will return these treated and/or repackaged containers to Hanford for storage or disposal.

Mr. Collins added that curies are measurements of radiation. USDOE needs to know the radiation amount to meet Permafix's waste acceptance and permit requirements before shipping there.

Ms. Conaway asked Mr. Bierman about the open item numbers assigned for various problems noted on the inspection checklists. Mr. Bierman responded item numbers are assigned for a specific situation. The "09" in the number indicates the year. Once it is assigned an open item number, Mr. Bierman starts working to fix it. It usually takes time to arrange for crews to do the work. For example, the tumbleweed crew cannot work in all weather conditions. Mr. Bierman stated that Fixes that require additional expenditures are elevated up through Dave Gillis and Stu Mortensen. Right now there are spare box covers in inventory. There usually are some available. Mr. Bierman said he took over the open item list in October of 2011.

Ms. Conaway asked about labeling. Mr. Mortensen explained that CWC operations work on the labeling and relabeling. The box in question is now labeled as dangerous waste (DW), PCB, and ACMP. The DW and PCB label were already on prior to the box being placed in the ACMP. The box went into the ACMP on February 9, 2012. The rad was found in the soil on February 6. According to Mr. Mortensen, procedures require adding the ACMP label when it enters the program.

Mr. Bierman said he was revamping the open-item list to show the close out, to be able to go back and figure out how an item was closed out. He stated that right now, items that get closed out just drop off the list and there is no documentation kept on the history of the problem.

After a lunch break, we reconvened to speak with Brandon Hamilton, radiological control technician (RCT). Mr. Hamilton has worked as a RCT for 10 years. He conducts the rad surveys, takes air samples, and performs weekly routine surveys at the CWC expansion area. It is part of his job to do the surveys because it is a designated radiation area for waste storage.

Mr. Collins interjected that some of the boxes have more rad in them than others and they are segregated into zones by radiation level.

Mr. Hamilton said "a higher energy" form of radiation, mostly gamma, escapes the boxes. Close in to the boxes you find alpha within 1 to 2 inches. He said that alpha is from the physical presence of the waste.

Mr. Hamilton said that either late November or early December 2011, (not sure of dates exactly), he moved back from another Hanford site to CWC. For the rad surveys, RCTs choose boxes and locations to survey rad on the boxes randomly, so that while the surveys are done weekly, the same box is not always going to be sampled in the routine survey.

Mr. Hamilton stated that he chose the 231-Z-DR -11 concrete box for sampling (according to the survey form we obtained later this was confirmed to be on December 20, 2011). He found alpha contamination on the box. He stopped and notified management. He said this is when it was "up-posted" to a CA, with a boundary distance of about three feet around and out from the box. There were physical access constraints because of the proximity of the box to other boxes next to it. Next, he checked for soil contamination on the ground around the box. As he recalled, the contamination limit for a CA posting was greater than 20 dpm for alpha, and greater than 100 dpm for gamma. The box was sprayed with invisi-blue, a fixative for rad contamination.

Mr. Hamilton explained to us that "fixed" contamination is radiation that is not easily removable compared to "removable" contamination, radiation that can move on to the ground or elsewhere. This is what happened around the box in question. That day he took a rad sample from the side of the box, (a smear using a special material to wipe) and found fixed rad contamination. These samples indicated alpha and beta radiation.

He described the procedure in more detail. Approximately 100 square centimeters are scraped with a rough paper used for the purpose. This is scanned in the field with instrumentation, and sometimes tested at "the lab." The levels are checked against the radiological work permit (RWP) limits to see if they are exceeded. These were exceeded on the box, and that was when he called management and posted the area as a CA by roping it off.

Mr. Hamilton did not reenter the CA area after November 2011 (again, according to the actual CA survey records, he conducted the survey on December 20, 2011, and therefore according to his statement did not enter the CA area after this). He performed "direct" sampling of soils. He explained that this means holding the instrumentation about ¼ inch from the soil. Soil monitoring was started as soon as it was posted as a CA. Mr. Hamilton said that the soils didn't come up "hot" until late January 2012 or early February 2012. To Mr. Hamilton, this indicates "removable" contamination. He said it would be someone else who would have the exact dates. Ms. Conaway showed Mr. Hamilton a copy of the survey form, providing the date of February 6. This rad survey indicated that the contamination had gone outside the three-foot zone indicating movable rad contamination. Mr. Hamilton stated that he was the RCT that completed the survey form.

According to Mr. Hamilton when something is wrong radiologically it goes into the Condition Reporting and Resolution System (CRRS), and is given to Mark Higby, radiological control. Noting the condition of containers is routine, but not necessarily part of the training RCTs receive. A CRRS is only noted once, and is not repeated on the survey forms after a CRRS is submitted (unlike the DW inspection checklist.)

Mr. Hamilton applied fixative on the day the contamination was detected as a part of a routine response, and he did not reapply a fixative until the radiation contamination was found to have spread outside of

the posted CA boundary. He reiterated that the CA boundary was about three feet around. The December 20 survey document was number #SW1100991. Readings and smear results are indicated at the bottom of page 1 of the CA report. About twelve or thirteen people do this type of work.

Mr. Hamilton knows the containers/boxes are sample smeared prior to being placed in CWC. Containers cannot be moved to CWC without being cleared as meeting allowable radiological standards.

The next interview was with Mark Higby and Rob Taylor together. We talked in general about the CRRS process, which is designed for an anomaly or problem. Bill Frisbee is the health physicist that generates the CRRS report. CRRS system is a tracking system. The CRRS report goes to the appropriate group's management team to make a schedule for fixing a problem. Problems are referred back to CWC management (Dave Gillis and Stu Mortensen).

Mark Higby confirmed that RCTs will, through experience and observation, target containers to do a rad survey on. They look for conditions that are most likely to be contaminated. Rob Taylor said that the containers smeared each day are listed on the rad survey form, and locations of the smears are shown on a map, also part of the survey form. If contamination is found the results are annotated.

Mr. Higby talked about a second CA involving a different box at the CWC. When the container was brought in they found contamination on the "platform." Contamination was mitigated on the trailer. The container was wrapped with plastic, and then posted as a CA. The boundary of this area was posted as twenty feet from and around the box. The 20-foot CA posting is still present today. There are weekly surveys conducted around the boundary, and these surveys have indicated no contamination outside this boundary. Because of the 20-foot posting, RCTs have stayed out except when they have been in to survey in support of workers getting to other boxes that are in close proximity.

Mr. Collins interjected that boxes from the trenches are assumed to be mixed waste.

Mr. Taylor said that when the surveys or inspections note "water infiltration" it is referring to the plastic wrapping that has visible water condensate on the inside. Some notations are about torn wrappings, and it means containers are exposed to the elements.

Mr. Higby said that dosage rates noted on the forms are different than contamination measurements. Reference to 2000 dpm/100 cm^2 is the threshold alpha levels. Mr. Higby stated that the monitoring shows the levels associated with 231-Z-DR-11 are going down well below the threshold, and he thinks this is because of the fixative that was applied to control the removable rad contamination. He further explained it takes very little plutonium contamination to exceed 2000, specifically what Mr. Higby termed "plutonium americium" which is a form of radiation stored in this box.

The liquid coming off the rail along the bottom of the box was dripping. They placed the wicking in order to channel it into the carboys. Mr. Taylor said they haven't seen any new drip locations on the box since placing the wicking on the rail. He noted that reference to the "iso-platform" is the name of the metal yellow beams the box sits on to keep it off the ground so as to facilitate transport of the box when needed.

Mr. Taylor went on to explain that the bottles or carboys are changed by operations staff. He doesn't believe the liquid is coming from inside the box, so in his opinion putting a cover over it makes sense. They believe it is from rain contacting the outside of the box. In regard to a "leak path" there is no air pathway so far, and this has been confirmed by DOH.

When asked about the possible sources of the leak, Mark Higby said it could be cracks and crevices from the box, since the box has been buried in the ground. A pinhole in a container could release radioactivity. He explained that a leak path can be a physical path and a very small hole in something, (for example a 1 microgram hole) could leak radiation, particularly a form of radiation like "plutonium americium," a very higb Curie rad that emits both alpha and beta radiation. Mr. Taylor agreed witb this assertion.

Mr. Higby explained that when a box arrives at CWC, there are different surveys performed. For the 231-Z box, a removable contamination survey was done when the box came to CWC. It is important to check for removable contamination when boxes arrive at CWC. By contrast, a direct contamination survey (survey of "fixed," or not easily removable, contamination) of the box would not have been done. Mr. Higby said that a routine survey of containers in storage at CWC also includes the additional surveying for direct contamination. Exceeding 20 dpm/100 cm^2 would be the trigger to take a closer look.

Mr. Taylor said that when they look at structural integrity they look for rusting or cracks in the concrete.

I asked were staff complaining about the condition of the box?

Mr. Taylor said no, not until the survey readings from December, 2011.

Mr. Higby said now there will be attention to the concrete boxes.

Mr. Taylor said photos on the survey forms show the location markings on a box where the direct samples are taken. The attached page on the survey form has the correlated sample results from each direct sample location.

Ms. Conaway requested that Mr. Collins provide the number of the box in the other CA area. This box is in the southeast corner. This task was referred to Mr. Williams. (Note: We received the number by email as A #7510DMA-06.)

Mr. Taylor ended with explaining he has been working at CWC three years in his current job. Before that, he has worked ten years as a rad technician, moving to another location and then back here.

We finished the day by requesting interviews the following day with Melvin Lakes, Christina Kiehn, Keith Yates, Dick Steen, and Pete Saiz. Because of high winds we did not look at the box.

We left the site about 3:30 p.m.

March 15, 2012

Ms. Conaway and I returned to the CWC at 12:50 p.m. on March 15 to resume the interviews. We were met by Mike Collins, Joel Williams, Ray Swensen , and Paul "Tad" Karschnia.

Dick Steen from M&EC, a subcontractor for CHPRC, joined us. Mr. Steen works in engineering solid waste operations at the CWC and the low level burial grounds. He has been in this engineering group since 2003. He is a design authority for CWC. We asked Mr. Steen about "design authority" and he explained this is a qualification under CHPRC design safety packages and radiation safety program.

Mr. Steen explained that the cover now over the 231-Z-DR-11 box is a temporary cover. It will be replaced with a metal structure similar to a metal carport. Parts for the replacement cover are now at CWC, it just needs assembly.

Mr. Steen said the first part of February 2012, the CWC operations group requested help with a weather cover. USDOE has a rad requirement for safety, and so the cover design has to comply with these requirements. Dangerous Waste concerns associated with the box were not part of the cover design scoping. Additionally, he provided construction direction to the sheet metal shop for the drip pans that were placed around the box. Drip pans were constructed of carbon steel sheet metal.

When asked about the structural integrity of boxes in the expansion area, Mr. Steen agreed that the structural integrity of the boxes would have to be evaluated, starting with the drawings. He bas looked at structural integrity of boxes before, usually wood boxes. Simple tests are performed. A concrete box is evaluated under the design authority for containers. This is referred to as IP-1 standard, a DOT standard. The box in question was evaluated by tbe expert who does this type of evaluation against the standard. Box 231-Z-DR-11 was the last in a line of wooden boxes in the trench found in early 2009. "Woody" John Woodberry did this assessment, but he is not on staff now.

We requested the name of the person who does design authority now. We were provided the name Scott Edward of CHPRC, an engineer.

Melvin Lakes was the next to be interviewed. Mr. Lakes is responsible for designating dangerous waste, and was responsible for designating the liquid coming from the box. Mr. Lakes has 15 years of experience, and is re-qualified every year with training. Training consists of a class, OJT, and a sign off by a manager. Mr. Lakes is an M&EC contractor assigned to perform dangerous waste designation for CHPRC.

Mr. Lakes made a number of assumptions on the dangerous waste designation for the liquid collected from box 231-Z-DR-11. He started by looking at the AK package for the box, number AK #2312-DES-07-01. Mr. Lakes was aware that the waste designation for the contents of the box included a number of listed wastes. Instead of applying tbe listing with the assumption that the liquid was a listed dangerous waste derived from a listed dangerous waste, Mr. Lakes was requested to take a look at the WSCF data package for the collected liquid from the box by Dean Nester and was directed to use this information instead. He received and reviewed the data from the WSCF lab analysis and used this information to determine the liquid from the box was not a dangerous waste because there were no detections of the listed constituents, and no exceedances of the TCLP thresholds.

Note: Ecology made a determination that a release from box 231-Z-DR-11 has occurred. USDOE was informed of this determination on March 8, 2012, and in writing in the Immediate Action letter dated March 22, 2012. Liquids coming out of the box, or coming in contact with releases from the box, must be considered listed dangerous waste because of the designation assigned to the box by USDOE from the 231-Z AK package.

Mr. Lakes explained that the AK packages are put together by a group of technical staff that conduct extensive research into historical activities. This effort takes almost six months of research to figure out what could be in a waste stream. I asked Mr. Lakes if the 231-Z AK package and the SWITs description are accurate, why is the box so heavy?

He told me that the lid alone weighs about seven tons. The box structure itself probably weighs thirty tons. Mr. Collins thinks up to 60,000 pounds may be the weight of the concrete box alone which does not include the weight of the waste inside the box.

The next person we interviewed was Christine Kiehn with Dave Cleavenger present. Ms. Kiehn has been employed at Hanford since 2004, but she has only been responsible for DW inspections over the last two weeks in a training capacity. She has been performing DW inspections of the 231-Z-DR-11 box over the last two weeks.

Ms. Kiehn explained she has to look for the container labeling and overall condition of container covers. She looks for the ID number on the container as the number one priority. If the box is labeled as an ACMP, she stated that it will be written with a marker pen on the container. Sometimes sticky labels come off containers. If the label is missing, she would not know whether a container should have waste codes and/or specific labels.

Note: The 231-Z-DR-11 box had a sticker label with "ACMP" on it.

Mr. Cleavenger interjected and explained that there is a yearly container inventory conducted, but it looks at quantity only. There is an effort to match up ID numbers and labeling, and Mr. Karschnia said CWC takes a selected sampling of containers at a time, like up to sixty, and checks against the records for the existence of proper labels. This is a lengthy process; last time it was done it took about ten hours.

Ms. Kiehn continued and said she was not expecting or looking for leaks or anything dripping onto the ground, especially "a box that has been in the ground (previous trench) for thirty years". She asked rhetorically, "What could still be liquid in a box that old?" Ms. Kiehn said she had dealt with the unexpected presence of liquids in containers stored in the CWC buildings. She stated that even an overpacked drum has been found in containers deteriorating from the presence of liquids. We thanked Ms. Kiehn for her time, and this completed our interview with her.

Mr. Karschnia said that temporary pads were deployed on the ground around the box maybe February 9th, (there was a photo that showed a kind of temporary plastic liner under the box.)

We talked with Mr. Karschnia, Mr. Collins, Mr. Swenson, and Mr. Williams about improving the dangerous waste inspections, possibly using the barcodes (like the Boeing facility) to help identify which DW labels are required on each DW and mixed waste container. Containers need to have the required labels and be verified they are correct. Ms. Conaway said it is required under the dangerous waste rules. Mr. Karschnia acknowledged the requirement, but noted it is currently a time consuming task.

Ms. Conaway renewed her request for documented proof of the permit authorization status of the CWC expansion area as an approved DWMU. Specifically, she asked Mike Collins questions about the M-091 and retrieval of waste from the Hanford burial grounds/trenches. She wanted to know if the milestone had directions for dangerous waste container management requirements once the containers were retrieved from a trench. Mr. Collins said that M-091 does not say much about the boxes (containers) once retrieved and stored elsewhere.

Note: TRUM must be certified as appropriate to go to the WIPP. The treated low level mixed waste from PermaFix is returned to Hanford for disposal at either the ERDF, a CERCLA landfill, or to trenches 31 or 34 at the burial grounds. Trench 31 and 34, dangerous waste management units are lined, but do not have unit-specific permit conditions or requirements in Permit Rev 8c. The contractor that was hired to certify containers to go to WIPP is no longer at the Hanford facility. Lacking the capability to obtain certifications, a requirement for waste acceptance at WIPP, uncertified waste is now held for storage at CWC.

What followed was a discussion about the various challenges of storing waste at the burial grounds or above ground location. Mr. Collins said they have concerns that Permafix isn't set up to deal with this heavy of a box like the 231-Z box. USDOE is looking into on-site capability to deal with it. Mr. Collins estimates seventy percent of the boxes in the CWC expansion area would be acceptable to go to Permafix or the Waste Isolation Pilot Project (WIPP) for treatment and disposal. The remaining thirty percent would need to be dealt with at Hanford.

We asked what kinds of inspections are required at CWC. Mr. Karschina told us that there are weekly dangerous waste inspections, monthly ACMP inspections, and monthly and quarterly safety and prevention equipment inspections for emergency response capability. The DW weekly inspection schedule is a result of an interim status permit. Ms. Conaway corrected Mr. Karschina, explaining the facility may be operating to interim status standards and does not have a final or interim status permit. Mr. Karschina agreed.

Ms. Conaway asked when the CWC expansion area was authorized for dangerous waste storage, and who authorized it. Mr. Karschina told us that the entire expansion area is within the CWC Part A permit boundary like the other waste management units such as WRAP and T-Plant Complex (SWOC). Mr. Karschina and Joel Williams added that there were discussions about the CWC expansion area with Eric Van Mason, an inspector and CWC permit lead for Ecology, (no longer employed with the agency.) We were told that the CWC is in the Part B permit application of the current Rev 9 draft permit, and also incorporated into the current permit, Revision 8C (Rev 8c).

Note: The Part A submitted as a part of the Revision 9 (Rev 9) permit application currently under public notice for CWC does not include the expansion area where the boxes are stored. Previously submitted Part A's are also lacking any description of the expansion area.

The draft permit Rev 9, Addendum H, Inspections, has no substantive changes to the dangerous waste inspection schedule currently being used at CWC. To conduct dangerous waste inspections, the facility follows SW040043, a procedure that includes a DW inspection checklist. This is procedure and checklist is not part of the current Rev 8C permit. The procedure is not referenced by the Rev 9 Part B permit application. USDOE's position is that facility procedures need to be flexible, and therefore should not be in the permit.

Mr. Karschnia said that ACMP containers sometimes overlap with the discrepant container management process (DCMP) containers. An overlap may depend on a particular problem, for example, if corrosion of a container is the issue it may also be in the ACMP. For mitigation of a rad issue, the procedure is to apply fixative and cover the container. The time clock for these actions would be ten days or thirty days. The original work package for the 231-Z-DR-11 box (begun on February 6) required a rad survey and application of fixative. Once this was completed, additional tasks were added to the original work package.

Mr. Karcshnia thought in order to move forward with solving the problems associated with this box, they need to figure out how to move it without further contamination and evaluate the box's structural integrity of the box. It was his thought that they would evaluate it as only a rad issue, but he conceded it is important to get the DW analytical data from the lab samples back. Joel Williams interjected to inform us that the WSCF lab is sending the unused sample volume back to the CWC facility.

For the out-brief of the day I provided an overview of the immediate action letter content. Present for the out-brief was Joel Williams, Mike Collins, Ray Swensen, and Paul "Tad" Karschnia. I commended them on the people we interviewed expressing that they were knowledgeable, helpful and professional. The following is a list of my initial feedback on the inspection:

- Emphasis is on radiation associated with containers and not dangerous waste compliance, e.g., they were slow to notify Ecology, and they were slow to mitigate the release hy getting the trays in place.

- CWC is not operationally prepared to respond to dangerous waste problems that come from containers stored outside like the CWC expansion area storage.

- The CWC DWMU outside expansion area is not adequately designed (gravel floor, no roof, lack of container covers, no secondary containment, open areas) to properly store the boxes.

- There are concerns with the weekly dangerous waste inspections, their quality, meeting WAC 173-303, attention to proper labeling, and ability to detect releases.

- DW contents of containers (like the 231-Z-DR-11 box) are not verified and characterized at CWC or the burial ground or another Hanford DWMU therefore, CWC cannot rely on the hazardous debris-only assumption.

- During the time spent conducting the inspection and the interviews, nothing was said or provided that proves a release of hazardous constituents has not occurred. The initial determination that a hazardous release occurred stands of this date.

- An immediate action letter will be issued. (Signed and delivered March 22, 2012.)

- The letter will be followed by an inspection report that will include recommendations for further action. Ecology will decide the next steps after that.

We left the site at approximately 3:30 in the afternoon.

Summary of Facts - 231-Z-DR-11 Box Release

The following summary of facts was established from review of the paperwork, interviews and sample data:

- The 231-Z-DR-11 mixed-waste container is identified as containing federally-listed dangerous waste and polychlorinated biphenyls (PCBs).

- The 231-Z-DR-11 mixed-waste container was identified as a Contamination Area (CA) on December 20, 2011; weekly radiation surveys on the box were established in accordance with the Hanford ACMP.

- During weekly radiation surveys of the aforementioned CA, liquids were found leaking from 231-Z-DR-11 box on February 6, 2012. Brown stains on the ground were observed by Radiation Control Technicians on this date.

- On February 7, 2012, USDOE informed Ecology of liquids coming from a mixed-waste concrete box, the 231-Z-DR-11 box. This was done by a phone call to Nuclear Waste Program compliance inspector Ms. Kathy Conaway.

- Drip pans were placed around the edges and under the 231-Z-DR-11 mixed-waste box on February 10, 2012. Plastic carboy containers were placed on their sides in the drip pans under the direction of CHPRC Operations managing the CWC outdoor expansion area. A wicking-type material was inserted in the metal joints of the 231-Z-DR-11 box to control the direction of the flow of liquid to the carboy containers and the drip pans.

- USDOE collected discolored liquid samples coming from the 231-Z-DR-11 mixed-waste box. According to the Waste Sampling Characterization Facility (WSCF) laboratory data package, samples were taken on February 12 and 16, 2012. These samples were analyzed by the WSCF laboratory located on the Hanford site. (The laboratory report from this sampling was received the afternoon of March 7.) Sample analysis reported measureable levels of cadmium, chromium, lead,

mercury, and PCBs. (For a more detailed analysis of this data refer to Memo from Jerry Yokel to Kerry Graber, dated June 25, 2012, attached.)

- USDOE and CHPRC are unable to substantiate the claim that the mixed-waste box, 231-Z-DR-11 is not leaking, and are unable to support the claim that the collected liquid is only rainwater and/or snow melt. USDOE and CHPRC are unable to substantiate the assertion that elevated radiation levels are not associated with contents escaping from mixed-waste container 231-Z-DR-11.

End of report. kag KAG

[i] Technical Procedure SW-040-043 Inspect CWC & Miscellaneous Buildings (Revision 8, Change 5, dated 03/09/12, was provided by Mr. Collins at my request for inspection procedures for CWC. This document describes the inspection program and includes a copy of the checklist used for these inspections. The reference by Ms. Carter to inspecting buildings as well as the graveled storage areas is consistent with this procedure.

[ii] This seems contradictory to earlier statements however the conflict may be due to not getting a clear understanding of the status of CWC as a regulated unit (DWMU).

[iii] It is this process that Ecology would like to see accelerated.

June 28, 2013

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DEPARTMENT OF ECOLOGY
NWP - RICHLAND

TO: Valarie Peery
Records Manager
Nuclear Waste Program

FROM: Kerry Graber KAG
Hazardous Waste Inspector
Southwest Regional Office of the Hazardous Waste Program

SUBJECT: Amendment to Inspection Report Dated March 7, 8, 14, 15, 2012
Department of Energy Hanford Facility, Central Waste Complex, Richland, Washington
RCRA ID # WA7890008967

The purpose of this memo is to transmit the attached amendment to the above-referenced inspection report for the administrative record. The amendment contains the citation of violations of the dangerous waste regulations as determined by an extended process of evaluation and discussion with US Department of Energy and its contractor, CHPRC. It is my understanding that the remedy for these violations is under evaluation by the Nuclear Waste Program at this time.

Please either attach this amendment directly to the inspection report with this memo, or insert a cross-reference in the inspection report that describes the location of this memo so that the compliance record is complete.

This amendment contains additional information not specified in the existing inspection report. Please be sure to follow your normal procedures for updating any public disclosure requests (on this topic) that took place prior to this date, e.g., letting requestors know there has been an amendment of a report that was previously disclosed.

Thanks.

kag

cc: John Level
John Price
Kathy Conaway
Joanette Biebesheimer

Attachment: Compliance Problems List

Amendment to March, 2012 CWC Inspection Report
Kerry A. Graber, Hazardous Waste Inspector KAG
July 3, 2013

Compliance Problems

The Dangerous Waste inspection on March 7, 8, 14 and 15, 2012 found the following compliance problems.

Each problem is covered in two parts:

(1) **citation from the regulations**

(2) **specific observations** from the inspection that highlight the problem

VIOLATIONS AT THE CENTRAL WASTE COMPLEX (CWC)

1. **WAC 173-303-360(2)(a)(ii), (d)(ii). Failure to timely notify Ecology of an imminent or actual emergency situation or a release which could threaten human health or the environment. Whenever there is an imminent or actual emergency situation, including a release that poses an imminent threat to human health and the environment, notification to Ecology is required.**

- The original release from box 231-Z-DR-11 was discovered through routine radiation monitoring that resulted in the identification of a contaminated area on December 20, 2011. The area was roped off and a perimeter or exclusion zone established.
- According to radiological technicians, alpha radiation is present when there is waste present, indicating a physical release of mixed waste had occurred. Staining on the ground was observed, and liquid was noted to be dripping off the box.
- Alpha radiation was originally discovered on the outside of box 231-Z-DR-11 on December 20, 2011, then discovered to have migrated outside the contaminated area by observation of a wet stain on the ground and by monitoring on February 6, 2012. USDOE and CHPRC did not notify Ecology of the release until February 7, 24 hours days after the observation of the release to the ground.

WAC 173-303-145(3) Mitigation and Control. The person responsible for a spill or nonpermitted discharge must take appropriate immediate action to protect human health and the environment (e.g., diking to prevent contamination of state waters, shutting of open valves).

- Personnel at the CWC are responsible for taking immediate actions to mitigate spills or discharges of dangerous waste or hazardous substances at CWC.
- For the release from box 231-Z-DR-11, when liquid was observed on February 6 the CWC did not have spill containment pans available immediately for mitigating the release.
- Spill containment pans were not deployed for three days after the spill was identified, from February 6, 2012 until February 9, 2012 at box 231-Z-DR-11.

3. **WAC 173-303-070(3) and 170(1)(a) Failure to designate waste according to required procedures. A person is responsible for designating tbeir waste as dangerous waste or extremely hazardous waste in accordance witb tbe process provided in tbe dangerous waste regulations.**

- As regulated generators of dangerous waste, USDOE and CHPRC are required to designate its waste in accordance with WAC 173-303-070 and -170.
- USDOE and CHPRC failed to designate the waste in the drums holding liquids collected from box 231-Z-DR-11.
- Wastes derived from listed waste must be designated with the associated listed waste codes.

4. **WAC 173-303-110(1), (3) Test procedures. Failure to obtain samples in accordance with procedures designed to yield representative analytical results of an acceptable quality required by the analytical methods. Ecology will consider a sample to be a representative sample when it is obtained using any of tbe applicable sampling methods described in WAC 173-303-110(2) Representative samples. Quality control procedures specified by the testing metbod or an approved equivalent metbod must be followed for the analytical result to be considered valid for designation and test procedures. Compliance witb representative samples and analytical test procedures is required when testing is utilized to comply with WAC 173-303-170(1).**

- Samples obtained of the release from box 231-Z-DR-11 in February 2012 by operations staff at CWC were placed in a Nalgene bottle and not the appropriate sample bottles for collecting representative sampling as specified by the methods for volatile organic compounds.
- CWC operations staff collected samples on their own initiative (initial sample collection), and then collected split samples (later sample collection) when Ecology requested samples.
- Operations staff collecting the initial samples did not follow established test methods, protocols, analytical and quality control procedures, or the required sample collection method.

5. **WAC 173-303-300(1), (2) General Waste Analysis. An owner or operator must confirm knowledge about a dangerous waste before it is treated, stored, or disposed. Detailed chemical, physical, and/or biological analysis of a dangerous waste must be obtained prior to storage, treatment, or disposal. The purpose for the analysis is to ensure that a dangerous waste is managed properly.**

- USDOE and CHPRC failed to confirm the contents of box 231-Z-DR-11 after the box arrived at CWC. USDOE and CHPRC relied solely on acceptable knowledge packages containing historical information to determine how to manage box 231-Z-DR-11 at the CWC.
- Decisions were made to place the box in the outdoor expansion area based on assumptions that the information about the box contents was sufficient and reliable. The box was identified as containing hazardous debris solids that does not contain any free liquids.
- The box leaked liquid that contains hazardous constituents into the environment. The acceptable knowledge package should have been confirmed by obtaining chemical, physical, and/or biological analysis prior to storage.
- The lack of confirmed knowledge for designation and characterization reduced the ability of CWC to make informed decisions about safe and appropriate storage.

6. **WAC 173-303-320(1) General inspection. Failure to inspect adequately to detect the deterioration of a container. The owner or operator must inspect his facility to prevent malfunction and deterioration, operator errors, and discharges which may cause or lead to the release of dangerous waste constituents to the environment, or a threat to human health.**

- USDOE and CHPRC failed to perform dangerous waste inspections at the CWC expansion area so as to prevent malfunction, deterioration, and discharges. The malfunction or deterioration of box 231-Z-DR-11 that resulted in a release of dangerous waste constituents to the environment.

7. **WAC 173-303-320(1), (2)(c) Inspections. Failure to conduct daily inspections of areas subject to spills. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. Areas subject to spills must be inspected daily when in use.**

- USDOE and CHPRC were only conducting inspections of the CWC expansion area on a weekly basis.
- Based on USDOE's and CHPRC's experience with non-conforming boxes and containers from the waste retrieval project trenches, USDOE or CHPRC should have been performing daily dangerous waste inspections at the CWC expansion area.

- The expansion area does not have a containment system capable of preventing liquids from entering underlying soils. In addition, box 231-Z-DR-11 is aging (at least 30 years old) and is not intended for long term outdoor storage.

8. **WAC 173-303-320(3) Inspections. Failure to immediately remedy prohlems revealed dnring the inspection of box 231-Z-DR-11. An owner or operator must remedy any problems revealed hy inspections and on a schedule which prevents hazards to the public (human) health and the environment. Where a hazard is imminent or has already occurred, remedial action must he taken immediately.**

- CWC personnel failed to timely respond and take remedial action in response to the release from box 231-Z-DR-11.
- Given the observation of elevated radiation levels on December 20, 2011, and the observation of visible dripping liquid to the ground from box 231-Z-DR-11 on February 6, 2012, remedial actions such as providing secondary containment should have occurred without delay.

9. **WAC 173-303-340(1)(c) Preparedness and prevention. Facilities must he designed, constructed, maintained and operated to minimize the possibility of fire, explosion, or any unplanned sudden or nonsudden release of dangerous waste or dangerous waste constitnents to air, soil, or surface or ground water which could threaten the puhic (human) health or the environment.**

- The CWC outdoor expansion area has no secondary containment, roof cover, or adequate container covers.
- The CWC did not have spill containment pans (as preventative equipment that could mitigate spills and releases) available immediately for the leak that was observed coming from box 231-Z-DR-11on February 6, 2012.
- Spill containment pans were not deployed until February 9, 2012, at box 231-Z-DR-11.

10. **WAC 173-303-380(3)(a) Facility recordkeeping. Failure to provide operating records upon request from Ecology. The owner or operator of a facility must keep a written operating record at their facility.**

- On [dates February 7, 8, and 21, April 19, and May 23, 2012], Ecology requested access to CWC operating records.
- USDOE denied Ecology access to CWC operating records on those dates.
- The denial of access to records caused Ecology delays in completing the release investigation.

11. **WAC 173-303-630(2) Condition of containers. Failure to maintain containers in good condition. If a container holding dangerous waste is not in good condition or if it begins to leak, the owner or operator must transfer the dangerous waste from the container to a container that is in good condition or manage the waste in some other way that complies with the requirements of chapter 173-303 WAC.**

- Box 231-Z-DR-11 is constructed of a steel frame with concrete walls, floor, and lid. The box shows signs of severe rust and deterioration. The box is not adequately stored for a container of this type. Once learning of the poor condition of box 231-Z-DR-11 and the leak, CWC staff failed to transfer the waste in that box to a container in good condition or otherwise manage the container in compliance with the requirements of WAC 173-360-630(2).

12. **WAC 173-303-630(3) Identification of containers. Failure to adequately label containers with the major risk, and/or to maintain identification of containers. Containers must be labeled in a manner which adequately identifies the major risk(s) associated with the contents of the containers for employees, emergency response personnel, and the public; the owner or operator must ensure that labels are not obscured, removed, or otherwise unreadable in the course of inspection required under WAC 173-303-320.**

- Box 231-Z-DR-11 was not labeled properly so that a facility operator conducting the dangerous waste (DW) weekly inspection could see the label at one end or another without stepping in between boxes. Required DW labels were placed on the box after the leaking incident began.
- The drums containing leaked waste from box 231-Z-DR-11 should have been labeled with the waste codes from the originating box as waste derived from listed waste.

13. **WAC 173-303-630(5)(b) Management of containers. Failure to properly store box 231-Z-DR-11. A container holding dangerous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.**

- Box 231-Z-DR-11 is stored in the open subject to extreme weather conditions and without cover or containment.
- The box has deteriorated to the point of leaking to the environment.

14. **WAC 173-303-630(7) Containment. Failure to provide an adequate secondary containment system. The owner or operator must have a containment system that is capable of collecting and holding spills and leaks.**

- Box 231-Z-DR-11 was transferred from the low level burial grounds and stored at the CWC outdoor expansion area in 2009 according to USDOE records.
- The CWC outdoor expansion area is a graveled surface area that does not have a secondary containment system. In addition, the CWC expansion area did not have a system to protect containers from the elements by means of a building or other protective covering.
- Box 231-Z-DR-11 had not been confirmed to contain no free liquids be free of liquids.
- The CWC has more than one expansion area that does not have secondary containment.

OTHER COMPLAINCE PROBLEMS

1. The criteria currently followed by USDOE and CHPRC at CWC for notification of spills, releases, and emergency incidents does not function to maintain compliance with the requirements in WAC 173-303-145, -350- and -360. The contingency plan for CWC must be updated to include criteria that results in compliance with the requirements.

2. Spill pans and other preventative equipment must be in stock and able to be deployed when a spill or release occurs at the CWC, pursuant to WAC 173-303-340. It is my understanding that CWC has procured supplies and equipment to upgrade the available equipment .

3. The Waste Analysis Plan must be revised to meet the requirements of full characterization pursuant to WAC 173-303-300, for all wastes received at CWC so that waste management practices match the risk presented by the contents of containers.

4. The discrepant container management system must be revised so that problems with the condition of containers, or problems with the content of containers, are more aggressively acted upon and corrected in a timely manner, pursuant to the requirements of WAC 173-303-630 and WAC 173-303-320. The inspection schedule and inspection practices must be improved so that areas subject to spills, e.g., storage units that are storing waste containers not confirmed to be free of liquids, are inspected daily, and observations of container deterioration are noted and remedied on an appropriate response schedule.

5. The graveled expansion areas holding waste from the M-91 waste retrieval project do not meet the required secondary containment standards for storage of containers with free liquids or containerized liquids. Some of these containers retrieved from burial trenches are known to contain, and have been proven to contain, both free liquids and containerized liquids. Ecology has determined this from historical records as well as records review at Permafix Northwest, an off-site TSD facility receiving and opening these containers for treatment. The CWC graveled

expansion areas are not exempt from the secondary containment requirements under WAC 173-303-630(7)(c) as has been claimed by USDOE and CHPRC.

6. CWC personnel do not appear to have the required training to sample containers or spills and releases from containers. The correct bottle and method for sample collection is basic knowledge that should be available to personnel at CWC so that they know what to do if they are called upon to sample. Procedures and protocols for correctly collecting samples must be part of an adequate training plan for CWC. The requirements of WAC 173-303-110 are requirements for every dangerous waste sampling event.

7. It is my understanding that the CWC does not have a dedicated area for treatment in containers, but that treatment activity is a capability that USDOE and CHPRC maintains they must have to deal with certain containers. CWC must have an appropriately designed area to conduct treatment in containers that is designed to handle spills, releases, and unexpected reactions to treatment processes. I am concerned that the CWC is not designed or prepared for treatment in containers, and the personnel on the site are not adequately trained to safely treat wastes at this facility. CWC should not conduct treatment without first addressing these issues.

8. The CWC does not have an accurate Part A with clear descriptions and explanations of each regulated unit with the operational boundaries of the CWC. A revised Part A that follows the requirements of WAC 173-303-806 and the form instructions for providing complete information must be submitted as soon as possible. Future expansions or additions of new units must follow the permit modification process under WAC 173-303-830 because the entire Hanford Facility is under a final status permit.

9. It is unacceptable to withhold information from Ecology that is part of the operating record and is required to be available on site during inspections by the Dangerous Waste Regulations. USDOE and CHPRC must remedy this problem so that future inspections are not hindered by records that are either unavailable because they are not at the site, or withheld because personnel are uncertain about operating record requirements. This is both a training issue and an internal management issue that must be corrected.

End of March, 2012 CWC inspection report amendment.

KAG